

## **Appendix D: Point source information**

Table D-1. Flow and total suspended solids data from Shelley and Firth wastewater treatment plants (WWTP), January 2000 to September 2003 (from Discharge Monitoring Reports).

Date	Firth WWTP		Shelley WWTP	
	Flow (cfs)	TSS (mg/L) <sup>1</sup>	Flow (cfs)	TSS (mg/L) <sup>1</sup>
Jan-00	0.15	15.0	0.59	40.5
Feb-00	0.11	67.0	0.59	40.0
Mar-00	0.14	56.0	0.53	59.0
Apr-00	0.11	57.0	0.40	41.0
May-00	0.09	65.0	0.39	47.0
Jun-00	0.18	35.0	0.28	33.0
Jul-00	0.50	43.0	0.34	35.5
Aug-00	0.79	14.0	0.31	86.5
Sep-00	0.64	9.0	0.45	91.0
Oct-00	0.39	0.0	0.56	44.0
Nov-00	0.14	27.0	0.60	5.5
Dec-00	0.14	26.0	0.59	12.5
Jan-01	0.20	31.0	0.62	20.5
Feb-01	0.18	40.0	0.67	17.5
Mar-01	0.17	47.0	0.65	10.5
Apr-01	0.15	26.0	0.46	22.5
May-01	0.12	24.0	0.36	39.5
Jun-01	0.14	4.0	0.34	22.0
Jul-01	0.29	29.0	0.32	38.0
Aug-01	0.29	16.0	0.29	6.5
Sep-01	0.30	15.0	0.42	29.0
Oct-01	0.13	1.0	0.40	28.0
Nov-01	0.06	4.0	0.56	2.5
Dec-01	0.07	11.0	0.57	14.0
Jan-02	0.09	51.0	0.59	17.5
Feb-02	0.09	20.0	0.59	12.5
Mar-02	0.08	8.0	0.65	17.0
Apr-02	0.00	0.0	0.59	24.0
May-02	0.14	31.0	0.40	231.0
Jun-02	0.17	8.0	0.34	29.0
Jul-02	0.00	0.0	0.20	63.0
Aug-02	0.27	16.0	0.32	123.0
Sep-02	0.29	15.0	0.48	63.0
Oct-02	0.20	3.0	0.46	29.0
Nov-02	0.12	30.0	0.53	15.0
Dec-02	0.00	0.0	0.54	26.0
Jan-03	0.00	0.0	0.59	50.0
Feb-03	0.13	36.0	0.51	60.0
Mar-03	0.11	24.0	0.48	50.0
Apr-03	0.14	26.0	0.46	55.0
May-03	0.17	13.0	0.42	81.0
Jun-03	0.11	45.0		
Jul-03	0.00	0.0		
Aug-03	0.34	19.0		
Sep-03	0.16	4.0		

<sup>1</sup>TSS=total suspended solids; once/month grab sample

Table D-2. DEQ sampling at Firth and Shelley wastewater treatment plants (WWTP), November 2002 to July 2003.

Date	Dissolved ortho-phosphorus as P (mg/L)	Total phosphorus as P (mg/L)	Total ammonia as N (mg/L)	Total Kjeldahl nitrogen as N (mg/L)	Total NO <sub>2</sub> +NO <sub>3</sub> as N (mg/L)	Total suspended solids - 105°C (mg/L)	Turbidity (NTU)
<b>Firth WWTP</b>							
14-Nov-02	1.92	2.24	13.6	15.6	0.036	16	
4-Dec-02							
15-Jan-03							
12-Feb-03	1.89	2.62	15.2	18	0.063	27	
18-Mar-03							
16-Apr-03	2.07	2.66	14.5	19.8	0.062	21	
7-May-03	1.28	2.43	7.46	14.5	0.325	45	
29-May-03	1.89	2.63	11	18.3	0.017	30	21.7
19-Jun-03	2.4	3.91	13.4	13.9	0.027	48	29
<b>Shelley WWTP</b>							
14-Nov-02	1.51	1.96	12.5	15.6	0.213	17	
4-Dec-02	1.28	1.91	11.8	15.3	0.49	21	
15-Jan-03	1.8	2.48	10.2	16.9	0.776	39	
12-Feb-03	1.76	2.61	9.25	16.1	1.19	49	
18-Mar-03	1.58	2.63	5.91	13.7	1.6	60	
16-Apr-03	2.45	3.01	6.64	12.8	0.521	23	
7-May-03	1.18	2.61	2.5	13.4	0.849	82	
29-May-03	0.143	0.872	0.026	7.28	0.027	44	27
19-Jun-03	1.07	3.38	1.81	19.2	0.058	90	35.2
2-Jul-03	1.85	5.72	4.05	21.8	0.073	91	
30-Jul-03	1.11	2.98	2.36	11.2	0.222	31	

Table D-3. Water quality data from Blackfoot Wastewater Treatment Plant, January 2000 to September 2003 (from Discharge Monitoring Reports).

Date	Flow (cfs)	Nitrate+ nitrite (mg/L) <sup>1</sup>	Total Kjeldahl nitrogen (mg/L) <sup>1</sup>	Total phosphorus (mg/L) <sup>1</sup>	Total ortho-phosphate as P (mg/L) <sup>1</sup>	Turbidity (NTU) <sup>1</sup>	TSS (mg/L) <sup>2</sup>
Jan-00	1.74						9.5
Feb-00	1.53						12.8
Mar-00	1.80						10.9
Apr-00	1.74						12.1
May-00	1.74						13.2
Jun-00	1.78						6.7
Jul-00	1.88						9.4
Aug-00	1.80						12.4
Sep-00	1.81						14.1
Oct-00	1.80						10.8
Nov-00	1.67						10.2
Dec-00	1.54						6.7
Jan-01	1.66						9.1
Feb-01	1.76						25
Mar-01	1.81	15.8	5.49	3.68	3.61	5.16	7.0
Apr-01	1.71	22.6	5.3	4.5	4.1	4.66	4.8
May-01	1.73	20.3	14.4	5.1	5.1	6.78	7.2
Jun-01	1.73	31.3	1.05	3.32	3.78	5.16	3.6
Jul-01	1.73	21.4	30.3	3.69	3.4	3.25	5.8
Aug-01	2.04	17.8	1.58	3.47	3.28	0	11.5
Sep-01	2.05	22.8	3.86	3.97	3.82	4.65	11.3
Oct-01	1.97	15.9	19.9	4.18	3.53	6.37	7.7
Nov-01	1.92	6.78	10.6	3.17	2.99	2.88	5.2
Dec-01	2.34	17.4	1.36	3.43	3	2.88	6.6
Jan-02	2.42	21.9	0.1	3.68	3.03	2.88	5.7
Feb-02	2.42	29.8	6.01	4.81		6.84	9.5
Mar-02	2.42	24.8	<0.1	3.38	3.38	2.28	4.8
Apr-02	2.42	26.6	1.89	3.91	3.28	4.66	5.5
May-02	2.02	24.7	<0.1	3.66	3.66	3.92	6.5
Jun-02	2.17	27.5	<0.1	3.87	3.75	3.09	6.0
Jul-02	2.58	22.9	1.53	3.87	3.52	3.09	7.9
Aug-02	2.58	18	2.32	4.22	4.02	7.82	12.7
Sep-02	3.12	21	0.1	5.04	3.52	8.74	9.3
Oct-02	3.30	17.4	2.47	3.46	3.4	9.66	12.2
Nov-02	3.20	9.41	1.7	4.4	3.77	20.1	19.4
Dec-02	3.10	15.5	4.45	2.83	2.7	7.57	11.9
Jan-03	3.02	16.2	3.88	0.37	0.31	5.24	7.5
Feb-03	3.05	13.9	2.55	0.49	0.2	4.81	7.5
Mar-03	3.28	15.2	4.34	6.7	6.56	13.9	8.8
Apr-03	3.44	20.4	2.76	4.01	3.82	3.35	5.9
May-03	3.80	16.1	2.48	3.22	3.13	1.15	7.2
Jun-03	4.17	13.5	1.59	4.69	4.59	1.08	7.2
Jul-03	4.25	13.6	1.93	8.08	8.07	2.5	6.1
Aug-03	4.63	9.52	2.77	6	5.36	3.47	9.0
Sep-03	4.94	6.63	3.67	2.13	2.13	6.21	5.7

<sup>1</sup>sampled once/month<sup>2</sup>TSS=total suspended solids; monthly average, sampled twice/week

Table D-4. Simple Method pollutant load calculation for stormwater runoff from City of Blackfoot into Snake River.

Land use categories	Land use area (acres)	Percent impervious	Runoff coefficient (Rv)	Average annual precipitation (in/yr)	Fraction of average annual precipitation available for runoff	Calculated average annual storm runoff volume (ft <sup>3</sup> /yr)	TSS <sup>1</sup>		Total phosphorus		Orthophosphorus		Nitrate+nitrite	
							Event mean conc. <sup>2</sup> (mg/L)	Annual pollutant loads (lbs)	Event mean conc. <sup>2</sup> (mg/L)	Annual pollutant loads (lbs)	Event mean conc. <sup>2</sup> (mg/L)	Annual pollutant loads (lbs)	Event mean conc. <sup>2</sup> (mg/L)	Annual pollutant loads (lbs)
<b>1 Subbasin</b>														
1 Residential--low density	21.4	20	0.23	10.0	0.90	160,903	271	2,723	0.99	10	0.78	8	0.29	3
2 Residential--medium density	102.8	30	0.32	10.0	0.90	1,074,764	271	18,189	0.99	66	0.78	52	0.29	19
3 Residential--high density	73.7	60	0.59	10.0	0.90	1,420,177	271	24,035	0.99	88	0.78	69	0.29	26
4 Commercial	252.7	90	0.86	10.0	0.90	7,099,890	271	120,158	0.99	439	0.78	346	0.29	129
4 Industrial	34.4	80	0.77	10.0	0.90	865,455	271	14,647	0.99	54	0.78	42	0.29	16
5 Public	0.0	50	0.50	10.0	0.90	0	271	0	0.99	0	0.78	0	0.29	0
6 Recreation	0.0	20	0.38	10.0	0.90	0	271	0	0.99	0	0.78	0	0.29	0
7 Transportation	0.0	80	0.77	10.0	0.90	0	271	0	0.99	0	0.78	0	0.29	0
<b>3 Rangeland</b>	0.0	5	0.10	10.0	0.00	0	271	0	0.99	0	0.78	0	0.29	0
<b>4 Water</b>	0.0	100	0.95	10.0	0.00	0	271	0	0.99	0	0.78	0	0.29	0
<b>5 Wetland/Riparian</b>	0.0	100	0.95	10.0	0.00	0	271	0	0.99	0	0.78	0	0.29	0
<b>6 Barren Land</b>	0.0	5	0.10	10.0	0.00	0	271	0	0.99	0	0.78	0	0.29	0
<b>7 Canal</b>	0.0	100	0.95	10.0	0.00	0	271	0	0.99	0	0.78	0	0.29	0
<b>8 Other</b>														
1 Junkyard	0.0	30	0.32	10.0	0.40	0	271	0	0.99	0	0.78	0	0.29	0
2 Petroleum Tanks	0.0	NA <sup>3</sup>	NA <sup>3</sup>	10.0	0.40	NA <sup>3</sup>	NA <sup>3</sup>	NA <sup>3</sup>	NA <sup>3</sup>	NA <sup>3</sup>	NA <sup>3</sup>	NA <sup>3</sup>	NA <sup>3</sup>	NA <sup>3</sup>
<b>9 Unclassified</b>	0.0		0.05	10.0	0.40	0		0		0		0		0
<b>Total</b>	<b>485.0</b>					<b>10,621,189</b>		<b>179,752</b>		<b>657</b>		<b>517</b>		<b>192</b>

<sup>1</sup>TSS=total suspended solids<sup>2</sup>conc.=concentration<sup>3</sup>NA=not applicable

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Table D-5. Water quality data from Aberdeen Wastewater Treatment Plant and ambient monitoring in Little Hole Draw/Hazard Creek, January 2000 to September 2003 (from Discharge Monitoring Reports).

Date	Wastewater treatment plant effluent						Ambient monitoring (Little Hole Draw/ Hazard Creek)	
	Flow (cfs)	Ammonia (mg/L) <sup>1</sup>	Total Kjeldahl nitrogen (mg/L) <sup>1</sup>	Nitrate+ nitrite (mg/L) <sup>1</sup>	Total phosphorus (mg/L) <sup>1</sup>	TSS (mg/L) <sup>2</sup>	Flow (cfs)	Ammonia (mg/L) <sup>3</sup>
Jan-00	0.43					11		
Feb-00	0.53					9		
Mar-00	0.77					9		
Apr-00	0.71					4.5		
May-00	0.65					4.4		
Jun-00	0.74					6.5		
Jul-00	0.85					4		
Aug-00	0.68					2.4		
Sep-00	0.62					5.5		
Oct-00	1.07					16.8		
Nov-00	0.60					16		
Dec-00	0.85					13.5		
Jan-01	0.96					18.2		
Feb-01	0.87					18		
Mar-01	0.96					16.8		
Apr-01	0.88					15.5		
May-01	0.76					17.6		
Jun-01	0.63					19		
Jul-01	0.59					10.2		
Aug-01	0.51					9.2		
Sep-01	0.48					4.8		
Oct-01	0.50					9.8		
Nov-01	0.39					15		
Dec-01	0.36	4.0	2.3	4.6	1.32	5.8	0.00	
Jan-02	0.42					8.2		
Feb-02	0.39					11		
Mar-02	0.53	6.2	9.1	2	1.6	15	0.68	0.82
Apr-02	0.59					13.6		
May-02	0.71					11		
Jun-02	0.57	2.08	8.1	1.4	1.7	11.8	47.84	<0.05
Jul-02	0.60					7.6		
Aug-02	0.46					10.5		
Sep-02	0.45	<0.05	2.3	6.5	1	8	0.11	<0.05
Oct-02	0.43					7.6		
Nov-02	0.57					10.5		
Dec-02	0.76	7.1	7.5	3.74	1.4	15.2	0.00	
Jan-03	0.82					15.8		
Feb-03	0.74					12.3		
Mar-03	0.76	8.9	8.4	0.87	0.86	18	0.00	
Apr-03	0.74					18.2		
May-03	0.73					14.5		
Jun-03	0.70	8.1	7.3	2.6	1.22	12	30.02	0.05
Jul-03	0.70					10.6		
Aug-03	0.65					8		
Sep-03	0.65	3.9	1.3	8.6	1.12	9.0	8.54	<0.05

<sup>1</sup>once/quarter grab sample

<sup>2</sup>TSS=total suspended solids; monthly average, sampled weekly

<sup>3</sup>grab sample

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